Journal of the Royal Society of Arts

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FORTHCOMING MEETINGS

WEDNESDAY, 6TH NOVEMBER, at 2.30 p.m. INAUGURAL ADDRESS. '*The Next 100 Years*', by Sir Alfred Bossom, Bart., LL.D., F.R.I.B.A., J.P., M.P., Chairman of Council of the Society. Silver medals awarded to lecturers last Session, and other awards, will afterwards be presented by the Chairman, and tea will then be served in the library.

THURSDAY, 7TH NOVEMBER, at 2.30 p.m. Visit of H.R.H. The Duke of Edinburgh, President of the Society: to preside at the Address, entitled '*Quality*', to be delivered by Professor R. D. Russell, Master of the Faculty of Royal Designers for Industry; to present his gift of a new Lecture Bench to the Society; to present the Bicentenary Medal to Sir Ernest Goodale and an R.D.I. Diploma to Mr. Misha Black. (*As announced in the* Journal *for 27th September, admission will be by ticket only. A few more requests for single tickets can still be entertained from Fellows who have not yet applied.*)

WEDNESDAY, 13TH NOVEMBER, at 2.30 p.m. PETER LE NEVE FOSTER LECTURE. '*Baden-Powell and the Boy Scouts*', by the Rt. Hon. Lord Rowallan, K.T., K.B.E., M.C., T.D., D.L., Chief Scout. The Rt. Hon. Lord Baden-Powell in the Chair.

WEDNESDAY, 20TH NOVEMBER, at 2.30 p.m. '*Exploring the Deep Ocean Floor*', by A. S. Laughton, M.A., Ph.D., of the National Institute of Oceanography. Sir Ernest Goodale, C.B.E., M.C., a Vice-President of the Society, in the Chair.

THE JOURNAL

The new postal rates for inland and oversesa, which took effect on 1st October, mean the addition of at least another £1,200 a year to the already great cost of despatching the *Journal* to Fellows, and only the severest economies in the standards of production would be sufficient in themselves to offset this increase. The Council has therefore decided that the best way to meet this situation is to publish and post the *Journal* at calendar monthly, instead of fortnightly, intervals; and that this change shall take place after the present volume is concluded with the issue for 8th November, 1957.

This new monthly *Journal* will be equivalent in size and contents to two of the previous fortnightly issues, and it will contain, as before, official notices, full records of all the Society's proceedings, general notes and the other regular features that Fellows have come to expect. There will be no change in the format or style of printing, although it may be necessary to make some minor adjustments on the cover.

The *Journal* will be published in the latter part of each month and dated as for the ensuing month, and the volumes hereafter will begin with the December issue and end with that for the following November.

RESULTS OF THE OFFER OF ENDOWED PRIZES

In accordance with the terms of certain bequests, the Royal Society of Arts this year offered two prizes under the terms set out below. The results of these offers are now announced:

1. *Howard Prize for Mechanical Motive Power*

A prize of £50 was offered for a treatise on some aspect of the subject of motive agents.

Two entries were received, and on the recommendation of the judge appointed by the Council, Mr. J. S. Tritton, M.I.C.E., M.I.Mech.E., the prize has been awarded to A. E. Johnson, D.Sc., M.Sc. Tech., M.I.Mech.E., of the Mechanical Engineering Laboratory at East Kilbride, for his treatise on 'Turbine Disks for Jet Propulsion Units: An Account of Work of the Disk Panel of the Ministry of Supply, Gas Turbine Collaboration Committee, during the years 1941–49'.

As Dr. Johnson's treatise, which is of a highly technical nature, has already been published in *Aircraft Engineering* (issues for June, July, August, September and October, 1956; pp. 187–95, 235–43, 265–72, 325–32 and 348–56 respectively), it will not be printed in the Society's *Journal*. Copies of the stated issues of *Aircraft Engineering*, price 3*s*. 6*d*. each (including postage), may, however, be obtained on application to Bunhill Publications Ltd., 12 Bloomsbury Square, London, W.C.1.

2. *Fothergill Prize for Fire Prevention or Fire-Fighting*

A prize of £20 was offered for a descriptive essay or model embodying some new idea for the prevention or suppression of fire.

Four entries were received. The judge, Mr. S. H. Clarke, M.Sc., Director, D.S.I.R. Fire Research Station, reported that the entry by Philip B. Smith, 'A New Method of Suppressing Fires in Mines', records the most novel suggestion in this respect that has appeared for a number of years. The Council has accordingly awarded the prize to Mr. Smith, whose essay is printed on page 938 of this issue of the *Journal*.

The Council has also decided that the entry by Mr. E. C. Simpson, 'Emergency Protection of Airfields with Foam', should be regarded as next to Mr. Smith's in order of merit.

MEETING OF COUNCIL

A meeting of Council was held on Monday, 14th October, 1957. Present: Sir Alfred Bossom (in the Chair); Mrs. Mary Adams; Dr. W. Greenhouse Allt; The Hon. G. C. H. Chubb; Sir Edward Crowe; Mr. Robin Darwin; Mr. P. A. Le Neve Foster; Sir Ernest Goodale; Dr. R. W. Holland; Mr. William Johnstone; Lord Latham; Mr. Edgar Lawley; Sir Herman Lebus; Sir Harry Lindsay; Mr. F. A. Mercer; Mr. Oswald P. Milne; Lord Nathan; Mr. A. R. N. Roberts; Professor R. D. Russell; Sir Harold Saunders; Sir Selwyn Selwyn-Clarke; Professor L. Dudley Stamp; Sir Stephen Tallents; Professor S. Tolansky; Mr. G. E. Tonge; Mr. H. A. Warren; Sir Griffith Williams, and Miss Anna Zinkeisen; with Dr. K. W. Luckhurst (Secretary) and Mr. J. S. Skidmore (Assistant Secretary).

ELECTIONS

The following candidates, whose applications had been received since the last meeting in July, were duly elected Fellows of the Society:

Ackroyd, Donald, Keighley, Yorks.
Akande, Joseph Olajire, N.D.D., Ibadan, Nigeria.
Alexander, Michael Owen Morley, Banbury, Oxon.
Allchin, Sir Geoffrey, K.B.E., C.M.G., M.C., Longfield, Kent.
Anno-Okanta, Robert Yirenkyi, London.
Ashton, Elwyn Thomas, M.A., B.Sc., D.P.A., Southampton, Hants.
Barnes, Ronald Charles, B.A., Liverpool, Lancs.
Barrow, Vernon Leslie, B.Sc.(Agric.), N.D.A., Surbiton, Surrey.
Bell, John Edward, M.I.Mech.E., Ashford, Kent.
Bennett, Miss Eleanor Margaret, N.D.D., Chichester, Sussex.
Berner, Professor Dr. Endre Qvie, Blindern, Norway.
Bernhardt, Douglas Victor, A.R.I.B.A., London.
Beswick, Clifford, Boreham Wood, Herts.
Black, Sam, London.
Boyes, Jack Stanley, Prestwich, Lancs.
Buckle, Gordon Horace, M.Cons.E., M.I.Mech.E., London.
Burkitt, Stanley Thomas, B.Sc., Haslemere, Surrey.
Campbell-Johnson, Alan, C.I.E., O.B.E., London.
Cardew, Anthony St. Erme, Bury, Lancs.
Carter, Frank Robert, Montrose, Victoria, Australia.
Chipman, Ian Beverley Manners, Guildford, Surrey.
Chippendale, William Henry James, London.
Congram, Mrs. Sheila, Tadworth, Surrey.
Corsan, John Charles, M.C., London.
Cusdin, Sidney Edward Thomas, O.B.E., A.R.I.B.A., A.A.Dip., London.
Dyson, Willie, Brighouse, Yorks.
Escott, Duncan Miller, London.
Evans, Frederick Ernest, Oxford.
Fison, Alexander Key, M.C., B.A., F.C.A., Chorley Wood, Herts.
Flatman, Donald James, Southall, Middx.
Fletcher, L. A., Bearsted, Kent.
Fordham, Roy Sydney, London.

Gaze, Richard, B.Sc., Ph.D., F.R.I.C., Cranham, Essex.
Geddes, The Rt. Hon. Lord, Balerno, Midlothian.
Giddy, Harry Douglas, F.C.A.(Aust.),Toorak, Victoria, Australia.
Greenwood, Harold, F.R.I.B.A., London.
Griffith, John Basil, B.A., A.M.I.C.E., A.M.I.Mech.E., Chislehurst, Kent.
Hagg, Miss Rhoda Jean, N.D.D., Norwich, Norfolk.
Hardiman, Kenneth Albert, Boscombe, Hants.
Heaton, John Ellwood, Cheadle Hulme, Cheshire.
Hollister, Thomas William, West Byfleet, Surrey.
Hudson, Miss Margaret Minnie, Wigan, Lancs.
Isbit, Arthur, B.S., Ph.D., St. Croix, U.S. Virgin Islands.
Jarvis, W. Howard, Liss, Hants.
Jones, Frederick Charles, B.Sc., A.M.I.Mech.E., Scunthorpe, Lincs.
Kitchingham, Henry James, London.
Laing, John Roderick, London.
Lane, Michael Godfrey Mace, London.
Langker, Erik, Wollstonecroft, New South Wales, Australia.
Leason, Percy A., Staten Island, New York, U.S.A.
Leevers, Frederick Norman George, B.Sc., A.C.G.I., East Twickenham, Middx.
Lewis, Richard Guilford, Ontario, Canada.
Lewis, William Robert, Bexleyheath, Kent.
Leyland, Lt.-Col. Herbert Martin, R.E., A.M.I.Mech.E., E.R.D., London.
Liddell, Miss Jenny, London.
Lloyd, Reginald James, Bideford, Devon.
Lowe, David, C.B.E., Gladsmuir, East Lothian.
Lummis, Mrs. Constance Emma, London.
McCall, Charles James, R.O.I., D.A., London.
Macpherson, Roderick Gordon Murdoch, Willowdale, Ontario, Canada.
Maddox, John Edwin Gordon, Johannesburg, South Africa.
Matthews, James Skitt, V.D., Vancouver, Canada.
Morel, Herbert Stanley, A.A. Dipl.(Hons.), A.R.I.B.A., Sidcup, Kent.
Newman, Lt.-Col. Augustus Charles, V.C., O.B.E., T.D., D.L., Buckhurst Hill, Essex.
Nowlan, Leonard Malcolm, Kingswood, Surrey.
O'Sullivan, Owen Donal V., London.
Ould, Edwin Thomas, Cheltenham, Glos.
Ratcliff, John, O.B.E., F.R.I.B.A., A.M.T.P.I., London.
Root, Ronald F., Birmingham, Warwicks.
Rushton, Raymond, Manningtree, Essex.
Scleater, Donald Ian, Watford, Herts.
Seaman, Matthew, M.Sc., M.I.Mech.E., London.
Seymour-Semper, Edwin, M.I.Mech.E., Purley, Surrey.
Snell, John Vibert, Jr., East London, South Africa.
Sparrow, David Rufus Ward, London.
Spencer, John Carrington, M.A., Ph.D., J.P., Westbury-on-Trym, Glos.
Stewart, Robert Forbes, M.C., A.R.T.C., F.R.I.C., Carshalton, Surrey.
Stratton, Hilary Byfield, Horsham, Sussex.
Thomas, Francis William, Coogee, Sydney, Australia.
Thrower, William Rayner, M.D., nr. Bridgwater, Somerset.
Truman, Gordon William, Exeter, Devon.
Turner, Philip John, Hull, Yorks.
Tyler, Bert Richard, Welling, Kent.
Wagstaff, Hal Hugh, Wellington, New Zealand.
Welch, Frederick Albert, Bebington, Cheshire.

Whyte, Kenneth McIntosh, M.Eng., M.I.Mech.E., Cheltenham, N.S.W., Australia.
Williams, Aneurin, Swansea, South Wales.

The following were elected Associate Members:

Pearson, Herbert, Scunthorpe, Lincs. (Examinations Silver Medallist).
Ross, Ian Grahame, Rowland's Castle, Hants.

POSTAL CHARGE INCREASES

Consideration was given to the very heavy increase in the cost of distributing the *Journal* caused by the recent postal changes and, on the recommendation of the *Journal* Committee, it was decided to publish the *Journal* monthly (see Notice on page 923).

NOS. 2/4 JOHN ADAM STREET AND 18 ADAM STREET

Estimates for building work involved in the adaptation of the extension premises to the Society's needs were considered, and the lowest tender, submitted by the Portman Structure & Decoration Co. Ltd., was accepted.

NOS. 6/8 JOHN ADAM STREET

It was reported that Nos. 6/8 John Adam Street, the Society's own freehold, had been scheduled as a 'Building of Special Architectural or Historic Interest'.

OTHER BUSINESS

A quantity of financial and other business was transacted.

FURTHER CONFERENCE ON PERILS AND PROSPECTS IN TOWN AND COUNTRY

A number of tickets are still available for the Conference on 21st November (see *Journal* of 27th September for details). Fellows who wish to attend should apply to the Deputy Secretary before 7th November.

SESSIONAL ARRANGEMENTS

A supplement giving a list of the meetings so far arranged for the forthcoming Session is included with this issue of the *Journal*. It should be noted that the title of Dr. Wokes's paper on 4th December has been changed since the list was printed: it should now read '*Some Nutritional Aspects of Vitamin B 12*'. It is regretted that there is also one error in the list: the title of Mr. Roger Falk's paper in the 'British Trade and Commerce' series on 7th May should read 'III. *With Western Europe*'.

PORTUGUESE PAINTERS OF THE XVth AND XVIth CENTURIES

The Fred Cook Memorial Lecture by

CARLOS DE AZEVEDO, M.A.,

Curator, Lisbon National Museum of Contemporary Art, delivered to the Society on Wednesday, 22nd May, 1957, with Sir Alfred Bossom, Bt., LL.D., F.R.I.B.A., J.P., M.P., a Treasurer of the Society, in the Chair

THE CHAIRMAN: We are particularly fortunate to-day. Dr. Carlos de Azevedo is going to lecture us on his own special subject. Portugal has been thought of mainly as the home of Vasco de Gama and Henry the Navigator and his English wife, but Portugal's magnificent historical background in many fields of art has only comparatively lately come to be widely appreciated outside her own borders; Portugal has managed, unintentially, no doubt, to keep her artistic heritage much unknown. Strangely, it was a man of medicine, a doctor, Professor Renaldo Santos who, largely by his own efforts, called the world's attention to the remarkably fine contribution that Portugal has made to the world's culture. His writings, his actions, remind us so much of what we are going to see this afternoon, the work of that great fifteenth-century master, Nuno Gonçalves. Gonçalves was hardly known here until we saw his work at the Royal Academy in the Portuguese Art Exhibition last year; to-day he is looked upon by a great many people, by real authorities, in fact, as comparing with such masters as Leonardo and Michelangelo. That he should be considered with such giants shows how much we have missed in years gone by. It is so too with many other great Portuguese art masters. Portuguese sculpture and architecture are not well known abroad, nor are her lesser arts, if one can so describe them. Portuguese gold and silversmith work will compare favourably with the best in the world. I refer to that wonderful example, the Belem Monstrance. That sixteenth-century monstrance is not surpassed, I feel, by any other achievement in metal work in the world and yet it is almost unknown in this country; we were tremendously impressed when we saw it in the Royal Academy's exhibition.

Portuguese fabrics too are a revelation, as are their examples of tile work, their wood-carving. Porcelain pictures as large as the side of a house are strictly Portuguese and quite unique. It is fitting that all lovers of art should recognize this spread of minor works of beauty that were literally unnoticed in the past.

Dr. Azevedo is an outstanding and highly responsible critic of Portuguese art, particularly so of that period he is going to cover in his lecture to-day. He was for a time a lecturer in London and also in Oxford; he knows us well; he knows what we do not know, and what he thinks we ought to know. He has come specially from Lisbon to talk to us this afternoon.

The following lecture, which was illustrated by lantern slides, was then delivered:

THE LECTURE

It has not been possible to pursue the study of ancient painting in Portugal beyond the fifteenth century, partly on account of the scarcity of works. This

explains the often-repeated statement that as practically nothing is known about painters and paintings prior to the famous Nuno Gonçalves, no great pictorial activity existed before his time.

The author contends, on the contrary, that documentary evidence points to a rather important activity of painters, although it is not known what was exactly the character of their work. The fact that in neighbouring Galiza—near Santiago and in Pontevedra—Romanesque murals have been found, dating from the twelfth and thirteenth centuries, cannot be entirely ignored, but a much stronger case can be made out of illuminated books which were produced in Portugal as early as the twelfth century. In fact, we can follow a coherent evolution from the early works like *The Apocalypse* of Lorvão (1189) or the even earlier *Book of Birds* (1183), both still showing a certain Moorish influence, to the richly decorated thirteenth- and fourteenth-century Bibles and *Cancioneiros*.

But apart from these subsidiary arguments, there is no doubt that paintings were already being executed in Portugal by the twelfth century, the same century which saw the foundation of the nationality. In one case, for instance, we hear of an altarpiece with the story of the Annunciation, painted on Bishop Dom Miguel's order between 1162 and 1176 for Coimbra cathedral.

As to wall paintings, it is not known whether Romanesque churches made great use of this type of decoration, although this seems probable in view of recent discoveries still awaiting study. On the other hand, the disappearance of many wall paintings is not surprising when we consider the fragility of materials, the rather damp climate in the north of Portugal where so many Romanesque churches are to be found, as well as the occurrence of fires, pillaging and neglect. The greater number of such existing paintings, therefore, are of a somewhat later date, generally of the fifteenth and sixteenth centuries. But there is no doubt that murals were already in use at least a century or more before Nuno Gonçalves, as in the cathedral of Braga wall paintings dated 1330–34 have been found. These occupy a large surface which is divided into separate panels, full of geometric and other decorative patterns showing Moorish influence. Sometimes sixteenth-century documents also mention 'old and faded paintings', or even that some chancel walls were 'all painted with many images', probably early Gothic works. In Bravães part of another fourteenth-century mural is still to be seen.

With the beginnings of the fifteenth century there is an increase in the activity of painters, and this sort of mural decoration must have been rising in favour, as is borne out by the frequency with which very early sixteenth-century documents speak of these 'faded' paintings. Whole churches were covered with murals, as in the case of the church of Taboado. In Valadares, the name of the benefactor who undertook the decoration of this country church was, fortunately, preserved in an inscription. The date is, however, half effaced.

Also, in the early fifteenth century we hear for the first time of court painters. One of these, the Italian Master Antonio Florentim (a native of Florence) of whom we have news in 1434 and who was sent for by John I, has been considered the author of a famous mural of a marked Sienese character painted in

the church of S. Francisco (*The Madonna with the Rose*) in Oporto. There is no evidence to support this attribution, but the presence of Master Florentim, the character of the great mural and some other works, are undoubted proof of the Italian influence at this stage. Indeed, we knew of several painters who, much before Nuno Gonçalves, visited Italy, where they left some of their works, sometimes even apparently settling in that country. The most important of these artists was Alvaro Pires de Evora, who is mentioned by Vasari and whose works are still to be seen in Pisa, Nicosia and Volterra. He has been considered as being more representative of the true Sienese tradition than Taddeo Bartoli himself (A. Venturi). This means that Alvaro Pires actually belongs more to Italian than to Portuguese painting. But there were others like Luis João de Portugal (in Pisa) who worked with Gozzoli, and João Gonçalves who painted some fine murals in Florence between 1436 and 1439.

Undoubtedly, Portugal was already receiving Flemish pictures by the mid-fifteenth century and in 1428–9 Van Eyck had paid a visit to Lisbon, although possibly too much importance has been attributed to this visit. But there can be no doubt that before Nuno Gonçalves, Portuguese painting had turned, not to Flanders, but to Italy.

Very little is known about Nuno Gonçalves. Documents confirm that he was active between 1450 and 1471 and later, in 1548, the Portuguese humanist Francisco de Holanda included his name among the greatest masters of his time. Holanda also adds that Nuno Gonçalves had painted the altar of St. Vincent in the cathedral of Lisbon, and on this information Dr. J. de Figueiredo attempted, in 1909, to prove that the famous panels now kept in the Lisbon Museum of Ancient Art are the paintings in question. To-day, this does not seem so easy to prove and the discussion around the subject has produced a considerable bibliography on what is, justifiedly, a problem of primary importance in Portuguese art.

No attempts to identify the central figure in the two bigger panels as St. Vincent can be considered satisfactory and the implication is clear—if this is not St. Vincent, patron Saint of Lisbon, then there is obviously no connection at all with the panels mentioned by Holanda. The main objection is that there are none of the usual attributes of the Saint in the famous series in Lisbon, and it is rather difficult to believe that the artist deliberately or inadvertently confused the iconography, denying him the unmistakable symbols like the ship, the crows, or the millstone. Although it has been suggested that the earlier iconography relied particularly on the Deacon's dalmatic and Gospel Book with none of the other symbols, the fact is that these were in use since the mid-thirteenth century, when they first appear in old Portuguese seals from the years 1245 and 1255. Indeed, the Lisbon bishops used them normally in their seals not only through the thirteenth century, but also in the fourteenth and fifteenth. It was the current iconography. There are also several sculptures and inscriptions in Lisbon where the ships and the crows appear as early as 1336.

Bearing this in mind, it is clear that Nuno Gonçalves did supply some elements of identification in the form of a coil of rope, a coffin and a fragment of a skull.

At the time, these must have seemed sufficiently enlightening. But we no longer know their meaning and cannot connect them to St. Vincent, although some scholars have attempted it. Others have advanced the idea that the central figure is not St. Vincent but Prince Fernando, who died a martyr at the hands of the Moors in North Africa. Whether or not this is true, the panels are to be classed as paintings of devotion (G. Kaftal) and as such the present arrangement in a single polyptych seems difficult, if not impossible, to justify. In fact, the presence of the two identical figures round which the composition revolves would seem to be in complete disagreement with the rules of sacred painting, and therefore it seems dangerous to try and fit in a third one in the middle. But this arrangement—although one cannot claim that it was the original without coming up against the above-mentioned objection—does give a sense of unity to the whole work and reveals a tempting symmetry in composition. It is based on the converging lines of the mosaics on the floor.

As to the problem of date, not even the presence of Prince Henry the Navigator's portrait has given a satisfactory answer to it. Henry died in 1460, but there are those who believe that the portrait might be posthumous. So far, this identification has seemed reliable because there is a similar portrait in the chronicle of *Guiné* by Azurara. But some people are even sceptical about it, while certainly all other portraits are purely conjectural and subject to discussion.

In view of what has been said, it is clear that there is the greatest difficulty in proving that these are the panels mentioned by Francisco de Holanda. Recently, it was suggested that they are another series dedicated to St. Vincent, but painted for the Convent of St. Vincent in Lisbon and not for the cathedral. Also, it is added, the famous paintings of which Holanda speaks perished in the disastrous earthquake of 1755, which caused great damage to the latter church. There is no evidence to support this theory. Furthermore, it appears that the Nuno Gonçalves paintings of the cathedral were not destroyed in 1755 because they had been removed some time before. Father Antonio da Piedade in his book *Meiodia Augustiniano*, published in 1763, goes as far as to say that the fire destroyed a new altarpiece which had been painted in the late seventeenth or early eighteenth century, but that the old one had been spared. Other documents confirm this and at one time we hear of several 'panels of St. Vincent' being removed to the outskirts of Lisbon by the Patriarch Dom Tomás de Almeida (in 1742).

It is also necessary to consider that, in 1642, Dom Rodrigo da Cunha described the old altarpiece in the cathedral as showing scenes of the life, martyrdom and miracles of St. Vincent and, obviously, the paintings in the Lisbon Museum do not fit this description in any way. But if the old altarpiece was not destroyed in 1755, then two of its panels might well be the *St. Vincent* and the fragment of another painting belonging to the Museum of Ancient Art, which have been technically and stylistically related to the famous Lisbon series (A. Gusmão).

All this reasoning has not yet led to definite results and the subject of the extraordinary paintings, one of the masterpieces of European painting, continues

to be a baffling mystery for art historians, as well as its original arrangement in the chapel. But no other Portuguese painter could have produced such a masterpiece, and the case for Nuno Gonçalves is borne out by the artist's signature (on Prince Henry's panel) which, although very faint, looks like an abbreviation of his name—N. G.

The six masterly paintings tell us a great deal about the achievements of this Portuguese master, whose technique is so different from that of his foreign contemporaries. This is evident, for instance, in the extraordinarily effective use of yellow instead of gold or in the practice of laying his paints on a thin brownish ground, almost directly on the wooden support instead of making use of the usual white ground which sometimes attained considerable thickness as in the case of Catalonian painting. This is, perhaps, the main reason why the famous paintings have come down to us in such good condition, with no major flaking of the paint layer.

In the treatment of shadows, also, Gonçalves is a subtle and accomplished master, as when he paints the armour and weapons and particularly some of the remarkable double shadows on the pavement or the violet shadows of the rich red dalmatic. As to composition, the dominating and directing principles make him far removed from the traditions of Flemish or Italian painting. It has been noted that no other artist of these schools, by the mid-fifteenth century, constructed his compositions in triangles with such unity and harmony (M. M. Jirmounsky).

No doubt certain portraits are remindful of the Flemish influence while others show affinities with Italian art. But in any case, the realism of Nuno Gonçalves is already distinct from that of Van Eyck (R. Huyghe). The intensification of reality is carried out in a masterly, sculptural manner, and it is not in Flanders that we find works of similar technique but in the school of Avignon. These affinities with Burgundian paintings (and tapestries) have been pointed out by several scholars. But Gonçalves surpasses other fifteenth-century painters in his monumental conception and his static figures have an eternal quality. They do not participate in any action. But they convey the energy of a people and the dream that was in their souls—the dream of the navigators, the warriors, kings and beggars, princes and monks, merchants and writers.

They are all in Nuno Gonçalves's work. If he fits into a particular phase of European realism, it is to him we must turn to find the first strong expression of rising individualism. The intensity of observation and individual characterization seen in Nuno Gonçalves finds its parallel not in the Flemish masters but in some of the great Italian mural paintings.

From Nuno Gonçalves to the following century the evolution of Portuguese painting is still difficult to follow. Undoubtedly, a series of works like the four panels of Saints in the Lisbon Museum of Ancient Art can be related to the great master's style. But nothing definite is known about them, and for all we know some might even have been produced at an earlier period in the fifteenth century. Other works like those of the Master of Sardoal, although already dating from the early sixteenth century, have a marked archaic character and are

better examples of this transition (J. Couto). At least, their style is still closer to an oriental, more particularly Byzantine, tradition of which there are also signs in Nuno Gonçalves.

By the end of the fifteenth century, the influence of Flemish painters was becoming predominant due to the increasing relations with Flanders, and for the whole of King Manuel's reign (1495–1521) Portuguese artists turned to the realism of the Flemings. Some even went to Flanders in order to work with reputed masters. In 1405 we hear of a Symon Portugalois working with Goosen van der Weyden and a certain Edwart Portugalois with Quentin Metsys, and probably Portuguese paintings were to be found in several churches, since it is known that four panels existed in the Dominican church of Bruges.

The Flemings were quick to see that Portugal would absorb many religious paintings and other art treasures, and the booming trade which that country was enjoying, due to the spices and other overseas products, seemed to promise endless commissions. Eventually, some Flemish painters settled in Portugal—Frey Carlos himself claims to be Flemish and at one time seven Flemings were working with Francisco Henriques, all seven having died of the plague in 1518. But, more important still, Flemish paintings were imported—sometimes ordered, sometimes sent as princely gifts. By this stage, most works came from Antwerp, where the Portuguese colony had rapidly acquired an important position. A great altarpiece by Metsys was commissioned by Queen Leonor, widow of John II, in the early sixteenth century (now in the Lisbon Museum of Ancient Art) and other works by Gerard David, Jan Gossart, Jos van Cleve, etc., found their way into Portugal. A first distinction should be made, therefore, between (*a*) imported works; (*b*) paintings executed in Portugal by Flemish masters. The problem becomes somewhat confusing when it is realized that Flemish masters usually worked with the collaboration of Portuguese painters, just as the Portuguese masters sometimes had Flemish painters working for them.

The tremendous influence of Flemish painting, however, did not entirely kill the originality of Portuguese art. In spite of the fact that, for a long time, composition, certain types and accessories, are of Flemish extraction, there are stylistical and technical differences in Portuguese paintings produced in King Manuel's time, and a few years later things were already changing under a stimulating influence from Italy. In portrait painting, particularly, we find the surviving qualities of a tradition which had launched Portugal as a pioneer in this form of art. As up to the mid-sixteenth century, painting is exclusively religious, whenever portraits appear they are still part of some religious scene (for example, the donors in *The Entombment* by Cristóvão de Figueiredo or in *The Adoration of the Kings* by the Master of S. Bento). By the middle of the century, however, isolated portraits make their appearance. While some follow a more traditional style, revealing a more genuinely Portuguese mood, like the arresting *Portrait of a Lady with a Rosary*, still one of the finest pictures in the whole course of Portuguese painting, others suffered the influence of Moro, who arrived in Portugal in 1551 or 1552 (for instance, the *Portrait of King Sebastian*, painted in 1570 by Cristóvão de Morais).

Apart from the problem of Flemish influence, it is no less important to consider the collective character of Portuguese painting in the sixteenth century. Painters worked in studios or workshops (*Oficinas*) and were subject to strict regulations. Work was distributed according to each artist's specialization, some being responsible for landscapes, others for architecture, yet others for costume, and so forth. It becomes, therefore, very difficult to trace the characteristics of one master in works of such mixed collaboration, but it is easy to understand why pictures of different styles reveal startling affinities, or *vice versa*, as painters changed studios and were frequently painting in different places in the country with other masters—Vasco Fernandes, for instance, worked in Viseu and Lamego, Cristóvão de Figueiredo worked in Lisbon, Coimbra and Ferreirim, Gregório Lopes in Lamego and Tomar, and so on. Furthermore, scientific examination of paintings has revealed the variety of techniques in one picture, thus confirming this collaboration.

This method of working in *parceria* (the *parceiros* being the partners) is responsible for what we might call a 'collective style' (M. M. Jirmounsky), and it standardized painting to such a degree that it is difficult to find a strictly personal note in most works. To complicate matters even more, paintings are rarely signed, and when that happens it should be remembered that it is in any case a collective work.

In spite of many names of painters to be found in documents, where sometimes mention is made of the work on which they were engaged, it has proved extremely difficult to identify the old masters through existing works. We are aware, for instance, of the importance of a master like Jorge Afonso in the early sixteenth century. Most great artists seemed to have worked under him at one time and his position as a 'king's painter' gave him an important part in the distribution of commissions. Yet no works can be safely attributed to him. A past attempt to give him certain works from Evora, like the big panels from S. Francisco, has been entirely dropped. On the other hand, certain works have been safely attributed to master painters like Vasco Fernandes, Francisco Henriques or Gregório Lopes. Indeed, quite enough is known about the latter, for instance, to enable us to identify certain pictures and to judge of his style (for instance, *St. Sebastian*, *Madonna with Christ and Angels in a Garden*, and so on). This last painting is already typical of a more advanced period (Lopes worked in Tomar from 1536 to 1539), with a growing Italianate influence. No longer is the scene laid in an enclosed room, but set in a delightful garden, in Renaissance taste and even showing an exotic tree.

But in a broader vision, the problem of identifications—although of undoubted importance—loses interest and a complete history of Portuguese sixteenth-century painting could be made without mentioning names—primarily because at this stage the artist effaces himself and is not interested in individual distinction of types. What mattered was the work as a whole, and uniformity was not only accepted but almost desired. Uniformity and anonymity are, in fact, two of the major clues to the interpretation of this sixteenth-century painting. Painters strove for the production of works which would be a fitting attestation

[*Lisbon, National Museum of Ancient Art*

Nuno Gonçalves (*XVth century*).
Knights' panel (detail)

Nuno Gonçalves (XVth century). Knights' panel (detail) [*Lisbon, National Museum of Ancient Art*

Gregório Lopes (XVIth century). ? Madonna with Christ and angels in a garden

[*Lisbon, National Museum of Ancient Art*

[*Lisbon, National Museum of Ancient Art*

Unknown Master (*XVIth century*). Portrait of a lady with a rosary

of the people's devotion to God. This was the supreme ideal—a religious ideal, and in their anonymity we have the unmistakable proof of their sincerity.

The adoption of strict rules, furthermore, ensured that paintings were produced according to certain requisites. From the earliest known edition of these rules (1572) we learn that official examiners were appointed every year and that they went round the studios every month, inspecting the paintings on which painters were engaged. If necessary, they had full authority to stop whatever was not in accordance with the adopted principles. Also, any master before being recognized as such, and wishing to open a studio, had to pass a practical examination. If considered competent, he was given the diploma. But if he evaded the law in any way, he was placed under arrest for a fortnight and had to pay a rather heavy fine.

In spite of these strict rules, which called for uniformity, there are inevitable stylistical differences which have allowed for the classification of the paintings in several groups dominated by one or more masters. Of these, Vasco Fernandes heads the most important provincial group (L. Reis-Santos) while Gregório Lopes, Cristóvão de Figueiredo and Garcia Fernandes seem to hold a key position, due to the many important commissions executed in Lisbon, Lamego, Coimbra, Ferreirim, and so on. Undoubtedly, Lisbon was the scene of the greatest activity. Countless paintings were produced and it will be enough to consider that for the great exhibition of the so-called Portuguese Primitives in 1940, which embraced the period from 1450 to 1550, more than six hundred works were inspected.

Not only were paintings commissioned for the churches on the continent but also for those being erected overseas. In Goa, several sixteenth-century panels shipped from Portugal are still to be found. The inevitable interchange of influences at this stage explains the appearance of the hybrid Indo-Portuguese art which produced such remarkable specimens of furniture, silver, embroidery, and so forth. But in painting there is no echo of this style if we except those works painted in Goa, like most of the long gallery of the Viceroys, where sometimes even Moghul influence can be detected.

The classification of paintings in the above-mentioned manner has led to a centralizing tendency, usually absorbing too many paintings into one group. As a result, a few major artists seem to have been responsible for the whole output of painting when, actually, documents are full of names of painters about whom nothing is known. But it is, undoubtedly, a reasonable process of putting some order into the great pictorial production of the sixteenth century.

If at first Portuguese painters come under the influence of Flemish masters, later the Italian influence becomes predominant. By the mid-century, however, their work was showing signs of decline. Also, the taste for colour was fast disappearing.

This growing Italianism was already becoming evident with works like those of the Master of Santos-o-Novo. One of the obvious signs of this evolution is the character of architectural backgrounds where the usual fantastic (or purely Flemish) structures are replaced by classical buildings. Several artists who had

been sent to Italy by John III were responsible for this new trend in painting. Among them, Vasco Pereira Lusitano (1535–94), who signed and dated several panels, shows a curious blending of Portuguese tradition and Italianism. But with the coming of the mannerist painters, it may be said that late sixteenth-century painting is better represented in the works of the masters who painted the great altarpieces like those of Portalegre Cathedral, Coimbra (Church of Carmo), Jerónimos (Lisbon), and so on. In these works there is much to learn about the persistence of the Flemish tradition and the new Italianate vogue with which it is associated. And from then onwards, a new period is opened up in Portuguese painting. If for a time it came under the influence of Spanish painting it also left an undying mark in the art of the great Velazquez, whose father was Portuguese.

DISCUSSION

THE CHAIRMAN: I am sure we shall all look upon Portuguese art with wider and more open eyes in the future, particularly the paintings of those two centuries of which we have been told. I was very much impressed by the simplicity of the backgrounds in these pictures. They are much more advanced, in a way, than in the Flemish or Italian pictures of the same period and they are much simpler. In the composition, too, I find there is almost a form that we would look upon as quite modern, different from that of so many other countries. We have much to learn, and I am sure that, now a beginning has been made in studying the art of this period, much more will follow. I hope, Sir, you may come back and tell us more of the subject on some future occasion.

MR. A. M. FITZPATRICK-ROBERTSON: When I came to school here in England, after having been born in Portugal and living there for 11 years, I was struck by what I took to be the large quantity of old Portuguese furniture of the first half of the eighteenth century in this country. I was also struck by a fair quantity of silver, which I took to be late seventeenth- and early eighteenth-century Portuguese. When I went back for my first holidays I mentioned this to my father, who told me that what I had thought to be Portuguese, was, in fact, Chippendale furniture. The woods were not the same but the designs were more or less so. In regard to the silver he gave me no explanation, but that point has been dealt with very admirably by Mr. Oman, the Curator of Metalwork at the Victoria and Albert Museum; there was certainly a Portuguese influence on silver in this country. In view of the fact that, particularly with chairs, you only find this resemblance in designs published after 1750 here in England by Chippendale, Manwaring, the two Halfpennys, Ince and Mayhew, and so on, and that the earliest known chairs of this kind—they are at Penshurst—can only be pedigreed back to 1740, it is, to me at any rate, quite obvious that the Portuguese cabinet-makers of the Don João V period—1705 to 1750—very strongly influenced their English colleagues' later work. I wonder if Professor Azevedo would tell us whether a similar sort of influence may have spread from the Portuguese painters, not only to Britain, but to Western Europe? I know there was an exchange of such influence between Spain and Portugal, but, so far, I have never been able to find anything at all written or said on this point. Would Professor Azevedo clarify that?

THE LECTURER: Apart from the particular case you mention of, mutual influences between Portugal and Spain, and at which I have just hinted, there is really no important influence of ancient Portuguese painting in Europe, although this is a chapter that is virtually unexplored. At the time when Flemish painting predominates

in Portugal, some Portuguese influence might have found its way up to Flanders. You will remember I mentioned Portuguese painters working there. Van den Bussche also speaks of Portuguese pictures in Flanders, although these cannot have had great influence on Flemish painting as they were kept privately. But in one case, for instance, this was certainly possible, as we know there was a Portuguese altarpiece in a church at Bruges. In another case, we hear of a rich lady taking Portuguese paintings to the same city. But it would be very difficult to trace any influence on Flemish painting of that period.

Contacts with other European countries at that stage did not have the importance of commercial and artistic relations with Flanders. It is very interesting to note that the island of Madeira at one time exchanged sugar for Flemish works of art. But at this early stage the Portuguese did not export much of their works, if we except the paintings shipped overseas for the newly erected churches.

As to the question of furniture and silver, we certainly know of the influence of English designs in Portugal. We also made Chippendale furniture, although the kind of wood employed is usually much heavier. Art historians have been mainly concerned with this aspect of English influence and tend to forget a reciprocal influence of Portuguese designs in England. This might open up a new field. But we are still very badly off in the matter of comparisons. I would refer you, Sir, to an excellent book published some two years ago by Mr. Cardoso Pinto on Portuguese chairs.

DR. S. GEORGE WEST: May I ask the speaker if he could tell us the name of the author of the work which is shortly to be published propounding the novel interpretation of Manueline art?

THE LECTURER: The author is Dr. Belard da Fonseca, who has recently announced his discovery in the Lisbon papers. I do not know when his book is to appear, but I expect it will be very soon.

MR. FREDERICK ADAM: Could the lecturer tell us about the very small Portuguese master at the National Gallery? I think we only have one, with Manueline Portuguese architecture in the background; it is a beautiful picture. I do not know much about it.

THE LECTURER: The little picture called *The Mystic Marriage of St. Catherine* which you mention, has raised some doubts in Portugal. It is not sufficiently characteristic to enable us to state that it is undoubtedly Portuguese. As you will realize, the National Gallery catalogue does not succeed in building up a strong case with all the arguments invoked. I think this little panel is still open to discussion. And as to the architecture in the background, I do not think that it can be termed Manueline. Most of these architectural backgrounds were copied or inspired by Flemish paintings, and if a few—like the Master of St. Auta—give us real buildings, on the whole they are somewhat fantastic creations.

A vote of thanks to the Lecturer was carried with acclamation, and the meeting then ended.

A NEW METHOD OF SUPPRESSING FIRES IN MINES

THE FOTHERGILL PRIZE ESSAY

by PHILIP B. SMITH

An underground fire which is detected in its very early stages and promptly and efficiently attacked may be extinguished with no more trouble than if it were on the surface; but these favourable conditions seldom occur in practice. The continuous patrolling of all underground roadways is a matter of great difficulty and expense; inevitably small local heatings, such as arise from minor mechanical defects in machinery, may go undetected. The temperature of a surface on which fine coal dust is lying need be no higher than 200°C. before smouldering is started. The steady ventilation of a coal mine favours the development of smouldering and may fan it to active flame. Fuel suitable for the growth of a serious fire is normally present in considerable quantities: there is the timber lagging of roof and sides, and in some cases there is also inflammable conveyor belting and the coal it carries.

Thus it happens that a fire may be well established before it is detected; a further period may elapse before it can be attacked. The ventilation current in a mine roadway has often a velocity as high as 400 feet per minute, and sometimes more. The flames from a fire are carried downwind and find fresh fuel for themselves as they go. To approach such a fire from downwind is normally quite impossible, even from upwind it may be a matter of extreme difficulty. The fire may travel so fast that in a short time it has left behind it a damaged and very hot length of roadway; timbers are burnt through and the roof may collapse and the fallen debris obstruct the road. An attempt to extinguish the fire with conventional fire hoses may fail for the simple reason that the water cannot reach the fire. The throw of even the most powerful jet is very short when the elevation is limited by a roof, which will seldom be higher than 8 feet; a range of 50 feet is as much as can be hoped for. Furthermore, the use of strong jets of water in a roadway already weakened by destruction of its roof supports frequently leads to serious falls of rock and so to increased obstruction.

Thus the fire-fighters find themselves making progress at a fraction of the rate at which the fire is spreading away from them. In these circumstances the only thing to be done is to abandon direct attack and seal off the area so that ultimately the fire dies from lack of oxygen. This may mean that a whole district is useless for months or even years; worse still, it may mean that the last chance of rescuing men trapped by the fire is lost.

It is obvious therefore that a new technique of fighting underground fires is needed. The method should, ideally, be applicable from a distance much greater than a water jet can carry and should not be rendered inapplicable by the presence of obstructions or heated strata. It should not depend on the use of electricity

or other services which may fail in the conditions of a mine fire; it should not depend on the availability of a staff of trained specialists.

These requirements are met by a method known as 'The Foam Plug Process'. It consists of forming up-wind of the fire a vast quantity of very light air-water foam, filling (or very nearly filling) the whole of the roadway. No attempt is made to project this foam towards the fire; it is carried there by the ventilation current. The foam is in no way similar to the foam made by the conventional Foam Extinguishers such as are effectively used for oil fires. Such extinguishers produce a thick clinging foam in which the ratio of air (or carbon dioxide) to water is about 8 to 1. The foam used in the process now described has a ratio of air to water of 1000 to 1, or even more, and its effectiveness is based on a different principle.

It is known that active flaming of most solid fuels ceases completely when the oxygen content of the atmosphere falls below some 15 per cent. Smouldering can continue in more vitiated atmospheres; but it has already been explained that it is the long flames racing downwind which make a mine fire so difficult to overtake. Thus the suppression of these flames is the first objective.

Any given quantity of water when converted to steam at 100°C. expands to rather more than 1600 times its original volume. If therefore a mixture of air and water in the ratio of 1600 to 1 is heated to 100°C. it becomes a mixture of air and steam in equal parts. The available oxygen in this mixture is 10½ per cent, which is well below the minimum requirement for flaming combustion. It has already been explained that a serious mine fire leaves behind it a length of intensely hot roadway and that it is this heat which makes it impossible for fire-fighters to reach the fire: the new method turns it to advantage. The problem of subduing the fire is thus reduced to the problem of introducing into the roadway a mixture (preferably an intimate mixture) of air and water in the ratio of about 1600 to 1.

This can readily be done by converting the air and water into foam. It has been shown* that foams of the required ratio can be made with a wide diversity of foaming agents. The first experiments were made with small quantities of commercial washing powders; but liquid agents are in general more convenient and some of them produce very long-lasting foams. A roadway down which a ventilation current is passing has been filled with foam for a length of several hundred yards; the foam expands into openings and surmounts obstacles. In fact, it largely replaces the original air; everywhere the ventilation went, the foam goes.

A raging fire of over half a ton of loosely stacked timber and a hundredweight of torn rubber belting has been reduced to a comparatively harmless heap of glowing embers in a few minutes. It has not yet been tried on an actual mine fire, but there is no obvious reason why it should be less effective than it was in experimental conditions.

The best method of generating the foam in the conditions likely to be found

* Eisner, H. S. and Smith, P. B., Safety in Mines Research Establishment Research Report No. 130.

underground was suggested to the author by a colleague† and is remarkably simple and effective. A net of knitted fabric is stretched across the roadway so that all the ventilation air passes through it. It is sprayed on the upwind side with water containing some 2 per cent of liquid foaming agent, which is introduced into the water stream by the simple suction device known to fire-fighting organizations as an 'in-line proportioner'. As films of the diluted agent form across the holes in the net they are blown into bubbles on the downwind side. They coalesce into a mass filling the roadway, and move continuously downwind. As long as spraying continues and the ventilation is maintained, the foam is generated. The ultimate distance to which it travels before it breaks up to such an extent that is ineffective for extinguishing fires depends on a number of factors: the type of foaming agent used, the ventilation speed, the effectiveness of the spraying, and the type of net. But there is in practice no difficulty in propagating the foam as a practically solid plug, capable of suppressing flaming combustion, for at least 200 yards. Although this in itself is a much greater distance than the range of conventional fire-fighting equipment, it is not necessarily the limit of the range of the method. It seems likely that if, in particularly unfavourable circumstances the foam could only be generated at a distance from the fire exceeding its effective range, a variation on the simplest method could be used. The cooling of the roadway downwind of the original site of the net would after a short time make possible the establishment of a second site some hundreds of yards nearer the fire. Thus, by a sort of 'leap-frogging', the fire would soon be within range of an effective mass of foam and could so be suppressed.

† Mr. H. S. Eisner, M.Sc.

GENERAL NOTES

RURAL INDUSTRIES BUREAU ANNUAL REPORT

For all too long the contribution that rural industries have made to the national economy has been overlooked. The days when each village had its own tailor, shoemaker and other tradesmen to make it self-sufficient are long since past. Most villages draw their needs from town factories. Shoes and clothing, furniture and electric goods, including wireless and television, come from the local market town. They are not even made there.

But that is not the whole story. In some remote villages small factories are now operating, and in the market towns there are more. As the recently published Annual Report, *Country Industries*, reminds us, the Rural Industries Bureau has recognized this new development, and its true significance. As it progresses it will provide employment for the village people who do not care for farm work, or who are, by virtue of mechanization, not required in local agriculture. They will not be obliged to leave the villages, but can go to and from their work daily.

The mention of mechanization at once underlines the importance of a skilled engineering service immediately available to the farmer, an engineering service capable of dealing with all the wide range of complex machines now used on the farms. Such a service demands equipment and knowledge of a very different order from that possessed by the old-time village blacksmith, admirable person that he was.

Here the Bureau is playing a vital part. It advises on the choice of tools and equipment, and provides instruction in their use as well as in the design and lay-out of buildings. The servicing and repair of farm machinery is a rural occupation of direct service to food production. Country engineers are engaged in other activities too, prominent among which are the manufacture of ornamental iron goods, gates, fences, signs and numerous other things.

In woodworking the local craftsmen do much more than supply the carpentry and joinery for buildings in the villages and on the farms. The making of lorries for farm transport, for instance, has taken the place of the wheelwright's shop. H. J. Massingham long ago sung the praises of the chair makers of Wycombe. Other furniture is also made in country workshops, and some of it exhibited at national and county agricultural shows and elsewhere can only be commended.

The Bureau has an experimental workshop that covers a wide range of activities. Here a power-driven petrol scythe for reed cutting has been designed, and is now in production by a small firm in Wiltshire. The boatbuilding shop has made experiments in sheathing a plywood punt in glass reinforced resin, and an 18 ft. centreboard sailing sloop has been similarly treated. A workshop for the restoration of antique furniture and to train rural cabinet-makers in the proper methods has been set up.

The smaller brickyards are not neglected. A permanent exhibition of their products is to be seen at the Building Centre, Store Street, W.C.1, and the Bureau has a clay testing station at Arborfield, Berkshire. Rural potters are not slow to consult it.

Thatching, basketry and hurdle making are three of the occupations that spring to the mind when rural crafts are mentioned. The Bureau is actively concerned with the needs of these trades, and with the revived art of saddlery making consequent upon the new interest in riding as a hobby, a spectacle and a profession.

It is difficult in a brief note to give anything like a conspectus of the Bureau's activities and affiliations. Suffice it to say, that the report takes rural industries right out of the romantic dreams of the nostalgic school, and shows them to have become well able to play a fitting part in the technological age in which we live, to provide for local needs and sometimes to supply a much wider market.

Copies of *Country Industries*, price 1*s*. 6*d*. each, may be obtained from the Rural Industries Bureau at 35 Camp Road, Wimbledon Common, S.W.19.

G. E. FUSSELL

ARTS COUNCIL ANNUAL REPORT

'Without a larger scale of subsidy from public funds the arts cannot survive' in this country. That warning is the keynote of *Art in the Red*, the Twelfth Annual Report of the Arts Council, 1956/7, which states that nearly every one of the 125 or so professional bodies assisted by the Council to provide the public with opera, ballet, music and drama is in a perpetual state of economic insecurity. This insecurity is not attributed to public indifference, nor to the adverse effect of television on the size of audiences. Most of the trouble is seen as the result of an almost universal lack of working capital among the assisted companies, which are consequently without funds to meet the emergencies to which they are liable. The Exchequer Grant to the Council for 1957/8 is £985,000. The report points out that if that figure were increased by one quarter the current situation would be resolved.

Referring to the particularly severe financial difficulties of provincial repertory companies, the report suggests that television has, by its very dependence on actors and plays, some obligation to assist the living theatre. Another suggestion for the benefit of the theatre and the arts generally is the establishment of a Lapsed Copyright Fund, supplied by means of a levy on performances of plays and music of the old masters for which no royalties are payable. With regard to art exhibitions, the Council sees no reason why its own increasing practice of charging for admission should not be adopted by municipal authorities.

In spite of these financial problems the report records a year of vigorous and resilient

life in the arts, with many successful new ventures and an encouraging public response. Copies of *Art in the Red*, price 2s. 6d. each, may be obtained from the Council at 4 St. James's Square, London, S.W.1.

FOREIGN SCHOLARSHIPS FOR BRITISH STUDENTS

The British Council announces that scholarships provided by governments, education authorities and universities in sixteen countries in Europe, Scandinavia, South America and the Middle East will enable eighty-nine British students to study abroad in the academic year 1957/58. The students are mostly young men and women who have recently graduated, and their plans for study cover a wide range of interests, including architecture, painting, sculpture, art history, textile design, and town and country planning. Publicity for the scholarships, and in most cases recruitment for them, is undertaken by the British Council, which offers similar awards to foreign graduates for study in the United Kingdom.

THE CHARTERED SURVEYORS GOLD MEDAL AND PRIZE 1958

The Royal Institution of Chartered Surveyors announces that again next year the Chartered Surveyors Gold Medal and a Prize of one hundred guineas will be awarded for a paper (on one of the specified subjects) which, in the opinion of an independent adjudicating committee, shows original thought and makes the best contribution to the advancement of knowledge. Papers are now invited on any one of the following subjects: 1. 'Land in relation to national economy'. 2. 'Incentives to future property investment, including the place of the leasehold'. 3. 'The future structure of the building industry'. 4. 'The likely effect on land development of scientific progress'.

Papers may be submitted by any person ordinarily resident within a country of the British Commonwealth or in the Republic of Ireland. They must be sent by not later than 30th April, 1958, to the Secretary, The Royal Institution of Chartered Surveyors, 12 Great George Street, London, S.W.1, from whom entry forms and further details should be obtained.

EXHIBITION OF CONTEMPORARY NEEDLEWORK DESIGN

In continuance of its efforts to stimulate the growing interest in good embroidery and sewing, The Needlework Development Scheme is now showing an admirably conceived and mounted exhibition at The Tea Centre, 22 Regent Street, S.W.1. The theme running throughout is, how and where to find inspiration for embroidery design; and in illustration of this the exhibition is divided into sections displaying work inspired from different sources—for example, plant forms—or illustrating different techniques. The workmanship of the articles on view is of a high order, and the exhibition should prove especially helpful to teachers and students. It remains open until 9th November, and there is a charge of 1s. for admission.

CORRESPONDENCE

COMMONWEALTH TEACHING AIDS

From SIR WALTER GURNER, C.S.I., *a Fellow of the Society, and member of the Library Committee of the Royal Empire Society, London, W.C.2.*

In his very interesting Thomas Holland Memorial Lecture on *The Imperial Institute*, Mr. Kenneth Bradley states that the Imperial Institute is in fact the only centre for the distribution of teaching aids about the Commonwealth (R.S.A. *Journal*, 29th September, 1957, p. 881). This does less than justice to the contribution made to the same cause by the Royal Empire Society, whose Information Bureau, attached to the Library, carry on much the same kind of activity. This Society maintains a Loan Service of Visual Aids to schools and educational bodies. In the year 1956 no less than 848 loans were made in the Visual Aids Loan service, consisting of pictures, charts, maps and filmstrips, maps were provided for the Society lectures

and an exhibition of books, photographs and maps was arranged in December for the annual Youth Conference. Admittedly these activities were not on the same scale as those of the Imperial Institute, but, on the other hand, except for pictorial donations from official sources they were carried out without any charge on the State, as a voluntary contribution to the object which both Institute and Society have at heart, of bringing home the idea of the Commonwealth to the student generation.

As the point was not made in discussion following the lecture, I should be grateful if publicity could be given in your pages to this revision of what no doubt was a passing oversight.

Mr. Kenneth Bradley, C.M.G., Director, Imperial Institute, writes:

Sir Walter Gurner's friendly rebuke is, I am afraid, justified. I was speaking, at that point in my lecture, in the context of the *sale* of visual aids through our Bookstall and was not thinking in terms of a Loan Service, though I am, of course, well aware of the valuable service of this type given by the Royal Empire Society. I should have used the word 'sale' rather than 'distribution', and I am sorry I did not do so.

NOTES ON BOOKS

LONDON: I. THE CITIES OF LONDON AND WESTMINSTER (BUILDINGS OF ENGLAND SERIES, NO. 12). *By Nikolaus Pevsner. Harmondsworth, Penguin Books,* 1957. 15*s net*

In *The Buildings of England* series, no less than in the lectures he gave as Slade Professor at Cambridge, Dr. Nikolaus Pevsner sees himself as a general practitioner amongst art historians, opening our eyes to whatever is visually exciting. In this latest volume, which contains a remarkably complete inventory of everything of architectural or artistic interest in the cities of London and Westminster, he is the most enthusiastic and stimulating of guides, no matter whether he is discussing Victorian architecture or the archæology of Roman London. He has an exceptionally good eye for what is interesting or significant, and he encourages us to look at a great deal that we might otherwise never have noticed. Moreover, although the book contains a prodigious amount of information, his style is lively and occasionally witty, and his descriptions of individual buildings fluent and easy to read.

In a long introduction Dr. Pevsner weaves together the story of London's growth and expansion with more strictly architectural history, and at the same time draws our attention to the most important buildings and sculptures which survive from each period. It is an excellent account, full of apt quotations and suggestive generalizations. For example, a sentence such as 'The urban London superimposed its pattern on the manorial London' neatly summarizes the processes that were taking place in the fourteenth-century city. In outlining what little is known about private mansions in medieval London he might, however, have noted C. L. Kingsford's skilful reconstruction from contemporary documents of the plan and appearance of Browne's Place, a substantial fifteenth-century merchant's house in Thames Street. And the bibliography could perhaps have included some of the great surveys of London: Fitz Stephen (late twelfth century), Stow (1598), Maitland (1756), Knight (1841).

The guide itself is far easier to use than the companion volume on London outside the City and Westminster which appeared in 1952, because in this case Dr. Pevsner has found it inconvenient to use the system of perambulations which he has adopted hitherto in this series, and lists everything except churches and public buildings under the relevant streets. One wonders whether public buildings should not also have been discussed in this way under street headings, especially as the author himself admits the inconsistencies of his definition. And an index of places would have been a great help.

On the whole, a very fair balance has been maintained in the amount of space

devoted to individual buildings. St. Paul's Cathedral, for instance, is very fully and sympathetically treated, and one welcomes the detailed discussion of projects and building history which was largely lacking for buildings of comparable complexity in the companion volume. Nor is Dr. Pevsner afraid to say when architecture is 'of a style that looks anonymous and can remain anonymous'. But sometimes, as in the case of theatres, one could wish for more complete notes. Even the building dates (1857-58) of the Royal Opera House are omitted, and it is hardly true to say that it was 'placed with such wondrous disregard of decorum right next to the Floral Market', because the latter was not then in existence. There are other inaccuracies to which one could point. For example, the columns in the Society's Library are not original but replacements dating from 1922: the building history of Lancaster House is more complicated than is suggested here: and Fenchurch Street station, which was designed in 1852, is not one of the oldest termini in London. It is a pity that slips of this kind are allowed to creep in, since for the serious student they must detract from the value of what is in so many respects a very remarkable book.

The illustrations obviously could not hope to be representative, and they reflect instead an interesting personal choice, particularly for the Victorian period. The plates themselves are good, and the whole volume is neatly produced. The manifold merits of Dr. Pevsner's new guide far outweigh its faults, and no one who is at all interested in London can afford to be without it.

JOHN HAYES

POTTERY MAKING AND DECORATING. *By Reginald Marlow. London, Studio (How To Do It Series, No. 70), 1957. 25s net*

THE WEAVER'S CRAFT. *By L. E. Simpson and M. Weir. Leicester, Dryad Press, 18s net*

If I were a young and inexperienced teacher I think I should find Mr. Marlow's book very useful. The photographic analysis of the construction of a teapot, which is the main feature of the book, is remarkably clear. The notes on history, development and techniques of pottery would remind me to brush up my knowledge and are useful sub-divisions for presentation to a group of students. But as an eager ignoramus seeking anxiously to teach myself how to make pots I should find this book less useful. The first chapter on 'Making' fills me with a technical fear. Do I really have to sieve the impurities out of the raw clay; and what is meant by 'wedging'? Turning the pages slowly—what are all these strange tools, a wooden chock, a zinc chum? and having learnt to throw, do I have to learn turning as well? The idea of producing a full-sized drawing of a teapot is overwhelming—surely the perfect teapot is the apotheosis of the potter's art, not the introduction to it?

Looking at the book, therefore, through rather fearful eyes, my feeling is that Mr. Marlow should have started with the chapter on 'History', which is full of inspiring and rather lumpy efforts which would give confidence to the beginner; he could then have gone on to Japanese thumbed pots and pressed dishes (which seem a simple way to get acquainted with clay), told us about moulds and finally introduced us to the wheel. Once throwing had become familiar, all the other chapters—biscuit firing, glazes, kilns, turning the thrown form for greater refinement, handles, spouts and the rest—would seem to follow: skills one would acquire by virtue of necessity as one's abilities increased.

Rather more formidable are the arts of decoration, which are rightly left to the end; and the lithographic process for ceramic transfer, nearly as detailed as the build-up of the teapot, is a craft to itself. Indeed the book, as 'how to do it', fails just because it makes the task throughout too formidable. It introduces the beginner to the heights, before he has learnt to play on the nursery slopes. Otherwise much of its information is admirable.

In contrast, *The Weaver's Craft* is just the kind of book to encourage the beginner,

although it was designed to help the teacher. It starts at the point where weaving is plainly a technique of interlacing and goes steadily on to the fully developed foot-power loom. Strangely enough, on page 30, it turns aside into 'Byways', the making of lavender bottles, palm leaf mats and the sort of tea-cosies one associates with country bazaars, but nevertheless even this has a kind of fascination. Somehow the book convinces me that I could weave; it deals with home-made looms, explains technical terms by a diagram of a primitive native loom, shows us a child at work on a waist loom, which seems simplicity itself, and leads us slowly through the complicated procedures of warping and threading. There are interesting notes on spinning and carding, and an introduction to vegetable dyeing which makes one long to experiment with privet leaves and roots of yellow iris.

It is difficult for a layman to appreciate the details of the old patterns, but the names Rose Path, Monks Belt, Wheat Ear, and Goose Eye delight the ear and evoke the spinning and carding of some medieval household. It is difficult, too, to get enthusiastic about tweeds, which always appear to be suitable work for the machine rather than the handloom. However, the skilful use of colour is vital to the modern dress tweed, and the hand weaver can play a useful part in planning new combinations, but the straight repetition of a man's suiting on the handloom does seem a waste of time. Some beginners may prefer to emulate those many modern weavers who use their skill to create unusual textures and magnificent colour blends, with the wealth of modern yarns at their disposal these days. The writers of this book, however, insist that we shall know all there is to know of the traditions, and rightly so.

SYLVIA POLLAK

SHORT NOTES ON OTHER BOOKS

REGARD THE EARTH. THE STORY OF THE INTERNATIONAL GEOPHYSICAL YEAR, 1957–58. *By Ronald Fraser. Foreword by Sir James Wordie. Science Club, n.d., 2s 6d*

Here is popularization of the best kind. In 16 pages, and with the aid of 8 pages of plates, Dr. Fraser summarizes in a manner both lucid and exciting the inception, purposes, organization and programme of work of this great scientific adventure. Of particular value to the layman is his succinct review, in turn, of the ten sections of the International Geophysical Year programme—meteorology, oceanography, glaciology; ionospheric physics, geomagnetism, the aurora, cosmic rays; seismology, gravity and latitudes and longitudes—since he indicates not only what the scientists hope to discover in each section, but also how their separate observations fit into the whole picture of modern geophysics.

THE GLASSHOUSE. *By Hector Bolitho. Privately printed* [*Jamestown Glasshouse Foundation Inc.*], 1957.

In April, 1957, occurred the 350th anniversary of the first colonial settlement at Jamestown, Virginia. The glass works begun by the settlers in 1608 under the direction of Captain John Smith were America's first venture into industry. Their site at Glasshouse Point was excavated in 1948, and has recently been restored to working life by an association of leading American glass manufacturers. Mr. Bolitho describes the hardships and difficulties which beset this early experiment.

FROM THE JOURNAL OF 1857

VOLUME V. *30th October*, 1857

ROAD-SIDE TREES

From a letter signed A. Bach

Your *Journal* of the 16th October contains the excellent suggestion that parishes,

now that the horse-chesnut [*sic*] has become an article of trade, might derive considerable profits by cultivating the tree along the sides of the roads, etc. It has, all along, struck me, that parishes might procure a considerable income from such a regular system of plantation of fruit-bearing or other useful trees. In many parts of Germany, the communes or villages derive large profits from this kind of property, planted along the sides of the high roads. The crop of each fruit-tree is sold by public auction, in the open road, at the end of each gathering season, yielding, on an average, four florins, or about 6*s*. 8*d*., per tree, the purchaser being at the expense of gathering the fruit. This source of income is nearly sufficient to defray the ordinary local expenses of each commune, including the schoolmaster's salary.

Might not such a system of plantation be also introduced by the numerous railway companies in this country, with great advantage to themselves and the community at large, along the sides and sloping terraces of the railroads through the length and breadth of the land? Millions of fruit-trees would yield an additional quantity of wholesome food, besides that excellent unintoxicating beverage, cider, and would thus add, in a marked degree, to the comfort and well-being of the people.

Let there be but the will, and the way will soon be found.

Some Activities of Other Societies and Organizations

MEETINGS

MON. 28 OCT. Imperial Institute, South Kensington, S.W.7. 5.45 p.m. Ulric Cross : *The West Indies : art in a new nation.*

Modular Society, at Royal Society of Arts, W.C.2. 7.30 p.m. Anthony Williams : *Practical selection of modular sizes for components.*

TUES. 29 OCT. Architects, Royal Institute of British, 66 Portland Place, W.1. 6 p.m. D. E. E. Gibson : *Problems of building on moving ground.*

Chemical Engineers, Institution of, at Blossoms Hotel, Chester. 7 p.m. R. Roberts : *Some aspects of the large scale use of irradiation in industry.*

The Chemical Society, at Nottingham University. 4.45 p.m. R. E. Richards : *Nuclear resonance.*

WED. 30 OCT. Free Evening Lecture, at Victoria & Albert Museum, S.W.7. 6.15 p.m. Sir Geoffrey Keynes : *William Blake : the man.*

Kinematograph Society, British, at Royal Society of Arts, John Adam Street, W.C.2. 7.30 p.m. S. Goodman : *The safety lighting system.*

THURS. 31 OCT. Chadwick Public Lectures, at The Usher Institute, Warrender Park Road, Edinburgh 9. 5 p.m. J. H. F. Brotherston : *William Pulteney Alison, Scottish pioneer of social medicine.*

Decorators and Interior Designers, Incorporated Institute of British, 100 Park Street, W.1. G. Goulden, Esq. : *Interior design review.*

FRI. 1 NOV. Applied Biologists, Association of, at Natural History Museum, Cromwell Road, S.W.7. 10.50 a.m. Symposium : *Domestic insects and allied pests.*

Engineers and Shipbuilders, North East Coast Institution of, at Literary and Philosophical Society, Newcastle-upon-Tyne. 6.15 p.m. C. C. Pounder : *The marine diesel engine.*

Royal Institution of Great Britain, 21 Albemarle Street, W.1. 9 p.m. Sir Hugh Beaver : *Clean air—what we know and what we do not know.*

SAT. 2 NOV. Horniman Museum, Forest Hill, S.E.23. 3.30 p.m. John Hill : *Agriculture in china today.*

MON. 4 NOV. Engineers and Shipbuilders, North East Coast Institution of, at Literary and Philosophical Society, Newcastle-upon-Tyne. 6.15 p.m. Dr. S. Livingstone Smith : *Nuclear power for the propulsion of merchant ships.*

Imperial Institute, South Kensington, S.W.7. 5.45 p.m. Shanthi Rangarao : *Indian art through the ages.*

TUES. 5 NOV. Analytical Chemistry, Society for, at The Royal Institution, 21 Albemarle Street, W.1. 6.30 p.m. Dr. Rudolf Pribil : *Recent developments in chelatometry.*

Chemical Engineers, Institution of, at The Geological Society, Burlington House, W.1. 5.30 p.m. Dr. R. P. Linstead : *Ninth Hinchley Memorial Lecture—An education for our times.*

WED. 6 NOV. Free Evening Lectures, at Victoria & Albert Museum, S.W.7. 6.15 p.m. George Wingfield-Digby : *William Blake : the symbolist.*

Kinematograph Society, British, at Royal Society of Arts, John Adam Street, W.C.2. 7.30 p.m. F. E. Farley : *Magnetic sound recording on location.*

Physical Society, at Institute of Ophthalmology, Judd Street, W.C.1. 3.30 p.m. B. W. Anderson : *Gems.*

THURS. 7 NOV. Anthropological Institute, Royal, 21 Bedford Square, W.C.1. 5.30 p.m. K. C. Rosser : *Newar social organization.*

Electrical Engineers, Institution of, Savoy Place, W.C.2. 5.30 p.m. Discussion : *The supply and training of teachers for technical colleges.*

Metals, Institute of, at Royal School of Mines, S.W.7. 7 p.m. J. White : *Refractories.*

Refrigeration, Institute of, at Pepys House, Rochester Row, S.W.1. 5.30 p.m. Dr. W. Summer : *A review of methods for odour control in refrigerated space.*

Road Transport Engineers, Institute of, at Bluecoat Chambers, School Lane, Liverpool, 1. 7.30 p.m. Dr. J. H. Weaving : *Gas turbines.*

Wool Education Society, at Royal Society of Arts, John Adam Street, W.C.2. 7 p.m. Ronald Paterson : *My way with wool.*

FRI. 8 NOV. Engineers, Junior Institution of, Pepys House, Rochester Row, S.W.1. 7 p.m. T. M. C. Lance : *Television.*

Mechanical Engineers, Institution of, 1 Birdcage Walk, S.W.1. 6 p.m. H. Kronberger : *Vacuum techniques in the atomic energy industry.*

Royal Institution of Great Britain, 21 Albemarle Street, W.1. 9 p.m. Geoffrey Gee : *New ways with large molecules.*